TUTORIAL

NASA RESEARCH SOLICITATIONS AND THE WRITING & REVIEW OF PROPOSALS

FOR THE

OFFICE OF SPACE SCIENCE
NASA HEADQUARTERS

VERSION 3.6, APRIL 2 , 2004

CONTENTS

PREFACE

This Tutorial has been prepared for the program staff members of the Office of Space Science (OSS) at NASA Headquarters. It covers in outline form all aspects of the public announcements used by NASA to solicit the research investigations needed to carry out its research programs, starting with their legal foundation in Federal Acquisition Regulations, the structure and content of the different types of solicitations (known as "Broad Agency Announcements"), tips for writing compliant proposals, and an overview of the policies used by NASA for its review and selection of proposals. In its entirety this material has been used to train NASA OSS staff, while selected parts have been presented to a wide variety of audiences from the U.S. research community, including graduate students and the staff of Sponsored Research Offices of universities, and program managers in other Federal agencies.

> **DISCLAIMER:** While every effort has been made to ensure that this material is fully grounded in and traceable to legal authority and/or formal NASA policies as may exist, in the event of any conflicts with any provision of any NASA Policy Directives (NPDs) or provision in NASA Federal Acquisition Regulations (FAR) Supplement (NFS), that NPD or NFS takes precedence.

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NASA RESEARCH SOLICITATIONS

AND

THE WRITING & REVIEW OF PROPOSALS

MAY 2004

Version 3.8

<u>Syllabus</u>:

- **Who?**
- **What?**
- **Why?**
- **When?**
- **Where?**
- **How?**

WHO. . .

- **. . . at NASA accepts *Solicited* Proposals?**
  - **NASA Headquarters Program Offices**
    - **Office of Education (Code N)**
    - **Office of Aerospace Technology (Code R)**
    - **Office of Space Science (Code S)**
    - **Office of Exploration Systems (Code T)**
    - **Office of Biological & Physical Research (Code U)**
    - **Office of Earth Science (Code Y)**

- **. . . at NASA accepts *Unsolicited* Proposals?**
  - **NASA Headquarters (only portal starting in 2005)**
  - **NASA Field Centers (common until 2005)**

WHAT?

- **Solicited Proposals**
  - **Submitted in response to a formal NASA Program Announcement:**
    - **NASA Research Announcement (NRA)**
    - **Announcement of Opportunity (AO)**
    - **Cooperative Agreement Notice (CAN)**
  - **Program funds may not exist until next Fiscal Year.**

- **Unsolicited Proposals**

  Submitted at discretion of proposer but must conform to standard NASA proposal policies:
    - **Proposal format/content same as that required for an NRA.**
    - **Incumbent on proposer to demonstrate relevance to NASA.**
    - **NASA not obligated to review unless proposal is complete, rationale, of interest, and funds exist for support if so warranted.**
    - **All are subjected to merit review for NASA relevance, science & technical merit, and cost realism & reasonableness.**

WHY?

(. . . are research announcements released by NASA?)

Key point: NASA pursues its space science programs as authorized by individual budget lines. Thus relevance to NASA programs is a fundamental criteria for support.

- **Basic *Supporting Research & Analysis* (*SR&T*) Programs**
  - **Supports science investigations relevant to past, present, or future space flight missions.**
  - **Proposals solicited by *NASA Research Announcements (NRAs)* and (less often) by *Cooperative Research Announcements (CANs).***
- **Space Flight Missions**
  - **Provides science investigations for specific missions, both unique (e.g., Cassini) and for "on-going" program lines (e.g., Discovery, Explorers).**
  - **Proposals solicited by *Announcements of Opportunity (AOs).***
- **Specific Research Infrastructure/Cooperative Activities**
  - **Science "institutes" (e.g., the NASA Astrobiology Institute).**

WHY? (continued)
(...an Introduction to the NASA Office of Space Science)

- **National Aeronautics and Space Administration (NASA)**

  An independent Federal Agency of the United States (U.S.) created by the *National Aeronautics and Space Act of 1958.*

- **NASA Vision**

  ***To improve life here, to extend life to there, to find life beyond*.**

- **NASA Mission**

  –To understand and protect our home planet;

  –To explore the universe and search for life; and

  –To inspire the next generation of explorers

  …… as only NASA can.

- **President's Vision for U.S. Space Exploration**

  ***"A Renewed Spirit of Discovery"* (January 2004).**

Office of Space Science (OSS). **Research is carried out through Supporting Research and Technology (SR&T) and space flight investigations as organized by four OSS science "themes":**

- ***The Sun-Earth Connection*.** **Physics of the Sun as a star and how its variable photons and plasma outputs create/influence the Earth's aerospace environment and interplanetary space.**
- ***Exploration of the Solar System*.** **Origin, evolution, and physical characteristics of the planets (esp. Mars) and their satellites (esp. the Moon) and other solid bodies in the Solar System.**
- ***Structure and Evolution of the Universe*.** **Physical study and characterization of the Universe, its constituent stars, galaxies, and other phenomena, and its origin and evolution.**
- ***Astronomical Search for Origins and Planetary Systems*.** **Quest for evidence of planetary systems in the cosmos, and study of the necessary and sufficient astronomical circumstances for the origin of life.**

HOW?

- **Legal Basis for NASA Research Solicitations**
  - ***National Aeronautics and Space Act of 1958*** **specifies that NASA use *Federal Acquisition Regulations* (*FAR*) to acquire goods and services.**
  - **NASA one of few Federal agencies authorized to modify FAR (called the *NASA FAR Supplement* (*NFS*)) that allows NASA to "purchase" science investigations through a contract, for which the deliverable is new knowledge about space and the cosmos through flight programs.**
  - **NFS 1835.016, "Broad Agency Announcements," authorizes:**
    (a) Announcement of Opportunity (AO; NFS 1872);
    (b) NASA Research Announcement (NRA; NFS 1835.01671); and
    (c) "Other forms" as approved by NASA Office of Procurement.
  - **Non-U.S. organizations may participate in NASA programs under the conditions the NASA policy of "no exchange of funds" and laws concerning export control.**
  - **Other Government agencies may propose to NASA and are funded through inter-agency transfers.**

WHEN and HOW?

- **NASA Research Announcement (NRA)**
  - **Dozens released per year.**
  - **Considerable freedom on part of proposer to specify specific objectives, within broad program objectives given in the NRA.**
  - **Commonly funded by the on-going Research & Analysis (R&A) budget line, also referred to as "Supporting Research & Technology" (SR&T).**
  - **Typically results in awards (grants and contracts) the order of $100K, but some can be smaller (~$50K) and some much larger (= $1M).**
  - **Requires *Yearly* and *Final Reports* and publication of research results.**
  - **Generic types:**
    - **Comprehensive SR&T programs for specific science disciplines (e.g., Solar Physics; Astrobiology; Astrophysics Theory).**
    - **"Guest Investigator" programs for operating missions.**
    - **Investigations carried out using suborbital rockets or stratospheric balloons (usually involves development of experiment hardware).**
    - **Special topics of high current interest (e.g., analysis of recent space data; future missions concepts; development of unique, targeted technologies).**

WHEN and HOW?

- **Cooperative Agreement Notice (CAN)**
  - **Relatively rare, typically only a one per year.**
  - **Format is similar to that of an NRA.**
  - **Used where research or research-related activity is to be carried out in close cooperation with NASA, i.e., "... *whenever ... substantial involvement is expected between NASA and the recipient during the performance of the contemplated activity*" (classic example: the formation/operation of a "research institute").**
  - **Results in a unique type of award called a Cooperative Agreement.**
  - **Can be for significant amounts of money (= $1M per year).**
  - **Requires regular reports and sometimes distinct "deliverables" by way of jointly agreed activities.**

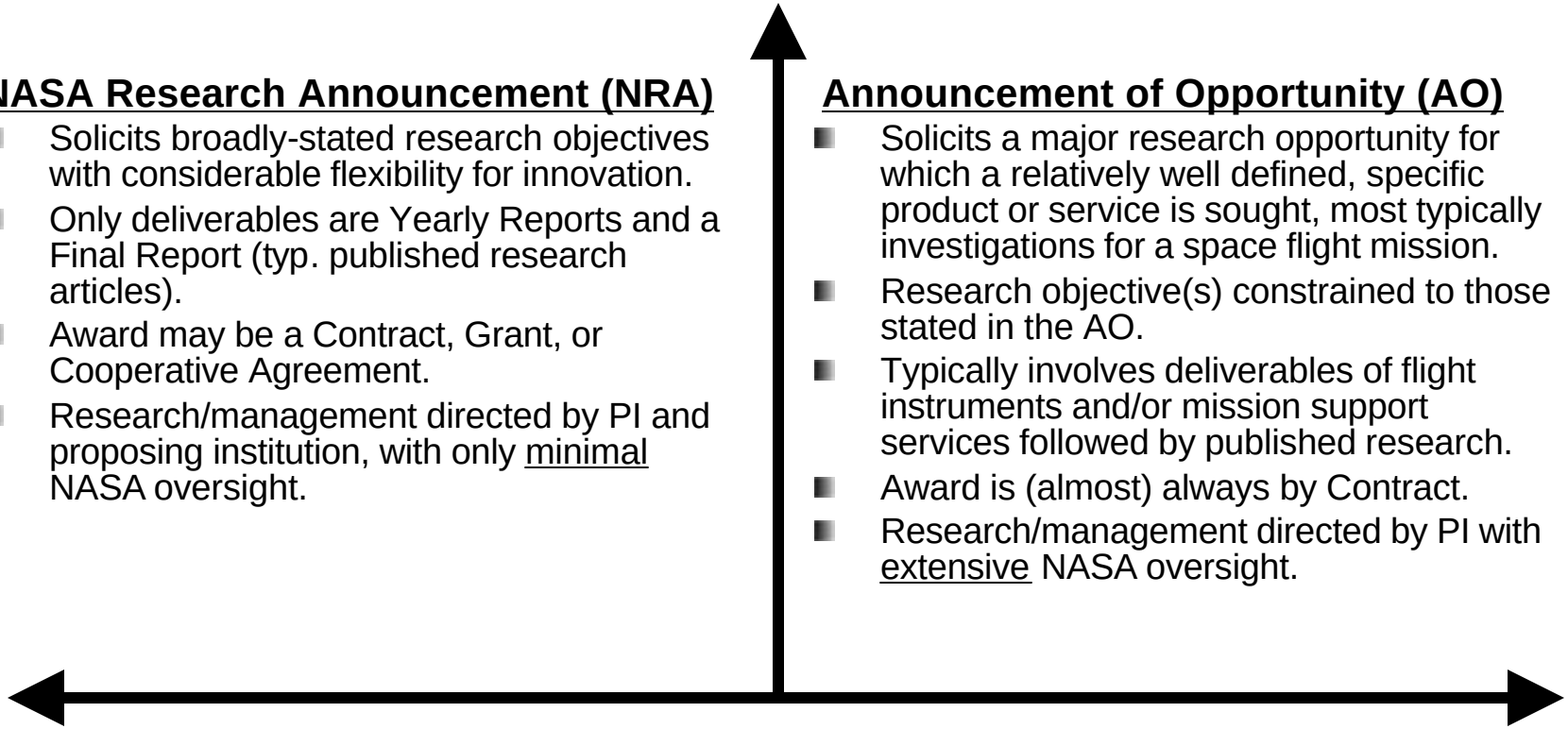
WHEN and HOW? (continued)

- **Announcement of Opportunity (AO)**
  - **Typically a few per year, always for specific space flight programs.**
  - **Invites proposals for research for which space flight hardware may be required to obtain the data needed to achieve the stated science objective — an end-to-end activity called a "science investigation."**
  - **Generally for much larger programs than those solicited by an NRA.**
  - **Involves formal, extensive review and selection processes that are extensively documented.**
  - **Generic types of AOs:**
    - **On-going space flight programs having standing budget "lines" of funding (e.g., the Discover and Explorer programs).**
    - **Unique space flight programs (e.g., "strategic missions" recommended by science advisory groups such as JWST).**
    - **"Participating Scientists" who augment the flight investigation teams as *de facto* Co-Investigators during the mission prime phase.**

Domains of NASA Research Solicitations, I

Cooperative Agreement Notice (CAN)

- Solicits for a unique program involving extensive interaction between NASA and the proposer to achieve NASA's objective (e.g., a Research Institute).
- The program intends a level of sponsorship, in the form of cost or resource sharing from both parties of the agreement, w/ moderate NASA oversight.
- Award only by a Cooperative Agreement.



NASA Research Announcement (NRA)

- Solicits broadly-stated research objectives with considerable flexibility for innovation.
- Only deliverables are Yearly Reports and a Final Report (typ. published research articles).
- Award may be a Contract, Grant, or Cooperative Agreement.
- Research/management directed by PI and proposing institution, with only minimal NASA oversight.

Announcement of Opportunity (AO)

- Solicits a major research opportunity for which a relatively well defined, specific product or service is sought, most typically investigations for a space flight mission.
- Research objective(s) constrained to those stated in the AO.
- Typically involves deliverables of flight instruments and/or mission support services followed by published research.
- Award is (almost) always by Contract.
- Research/management directed by PI with extensive NASA oversight.

Domains of NASA Research Solicitations, II

Cooperative Agreement Notice (CAN)

- Research institutes that foster specific research, university education, and public outreach (e.g., NASA Astrobiology Institute).
- Data facilities that serve the community by carrying out in-house research, including development of Information Technology.
- Education (K-12) and Public Outreach infrastructure and activities.

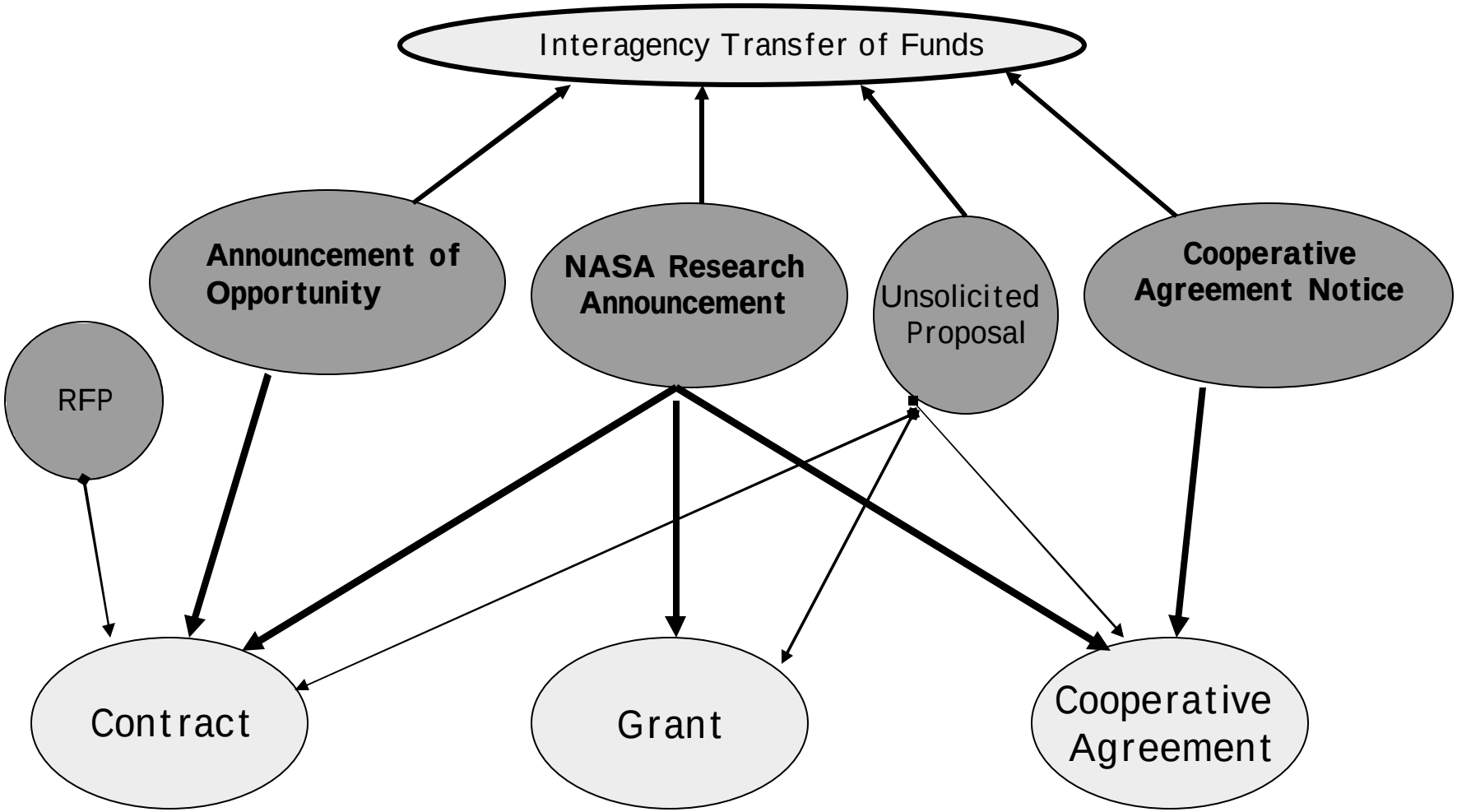
NASA Research Announcement (NRA)

- Theory/modeling to understand space data.
- Analysis of data from NASA's missions.
- New experiment techniques and technology development for future missions.
- Chemical and physical properties needed for analysis of space data.
- Grnd-bsed obs. critical to NASA objectives.
- Suborbital (rocket & balloon) investigations of natural phenomena and development of instruments for future flight missions.
- Concept studies for future space missions.

Announcement of Opportunity (AO)

- Investigations carried out on space flight missions with provision of experiment hardware, followed by analysis of data and publication of scientific results.
- Investigations carried out by serving as additional members of already-selected flight missions investigation science teams.
- Investigations carried out through the provision of major ground-based facilities.

Types of Funding Awards for NASA Research Solicitations:



WHERE?

(...are NASA Program Announcements announced/published?)

- ***Federal Business Opportunities (FBO, aka: "FedBizOps")***
  - **Required by law for all Government solicitations for any product or service for which the financial award may be a contract (includes NRAs and AOs, but not CANs).**
  - **An FBO announcement appears by law 15 days prior to release: includes synopsis of announcement, release date, location to obtain full solicitation, proposal due date, and contact for additional information.**

- **NASA E-Notifications**
  - **Maintained by NASA as a courtesy to interested subscribers.**
  - **Sent at same time as *FBO* announcement to ~6000 subscribers (provides ~20 day advance alert of release).**
  - **No-obligation, confidential subscriptions through program office homepages (e.g., for Space Science, *www.spacescience.nasa.gov*).**

WHERE? (continued)

- **World Wide Web Homepages of Program Offices**
  - **May be accessed through NASA Homepage (*www.nasa.gov*).**
  - **Direct Web site:** *http://research.hq.nasa.gov/code_s/code_s.cfm*
  - **Characteristics of Web released announcements:**
    - **Available for downloading in common computer formats.**
    - **Each listing may include Questions/Answers and/or other post-announcement information.**

- ***Ad Hoc* Venues**

  At the discretion and initiative of cognizant NASA Program Officer:
  - **Discipline-unique publications (e.g., *AAS Newsletter*; AGU *EOS*).**
  - **Verbal announcement at timely discipline-unique meetings.**
  - **Commercial publications as a news story (e.g., *Space News*).**

WHAT?
(…are the characteristics of OSS Program Announcements)

- **NASA Research Announcement (NRA)**
  - **Solicits *basic research* to be published in the peer-reviewed literature (that is, not for a definite end-product or service).**
  - **May solicit for broad areas (e.g., *Astrophysics Theory*), as well as very specific subjects(*SEC Guest Investigators*).**
  - **Funded by on-going NASA Research & Analysis budget.**
  - **Typically 20–100 proposals received per NRA, w/selection ratios ranging from 1::2 to 1::6.**
  - **Typically small ($10K–200K) grants or contracts (PI + 1–2 Co-Is).**
  - **Typically 3-year periods of performance (but a few allow 5 years).**
  - **Always posted on NASA Web sites, preceded 15 days by *FBO* notice and OSS E-notifications to subscribers.**
  - **Typically 90 days allowed from release to proposal deadline.**
  - **Typically =5 months for review/selection after proposals received (assuming budget is available).**

- **Announcement of Opportunity**

  - **Solicits a *science investigation* to be carried out within framework of a definitive program, usually a space flight mission.**
  - **Involves provision of flight experiment and/or involvement in mission activities to complete a proposed *investigation*, that is, the acquisition of new knowledge (which might involve flight hardware).**
  - **May be for a singular program (e.g., *Mars Surveyor Mission*) or an on-going series of flight missions (e.g., *Explorers*).**
  - **Solicitation based on 'performance' specifications, not 'technical' specs.**
  - **May be for limited efforts (*e.g.*, Participating Scientists @ $150K ea.) up to complete flight mission investigations (*Discovery* @ $300M ea.).**
  - **Proposal must have a single Principal Investigator but allows allows Co-Investigators as required/appropriate (5–30 Co-Is).**
  - **Usually involves flight hardware to be delivered, flown, and operated, followed by reduction, analysis, and publication of data.**
  - **Typically two to four AOs per year.**
  - **Awards almost always through contracts with periods of performance from three to 10 years or more.**
  - **Announcement of selections typically 4-5 months after proposals due.**

HOW?
(...are AO's and NRA's developed and written?)

- **Content of an Announcement (of any kind)**
  - **Who?**
  - **What?**
  - **Why?**
  - **When?**
  - **Where?**
  - **How?**
- **Proscribed formats are given in NFS for both NRAs and AOs.**
- **Internal reviews of draft NRAs and AOs look for:**
  - **Program definition/clarity of purpose/directions to proposers.**
  - **'Internal consistency' of material.**
  - **Adherence to Federal Acquisition Regulations (FAR), NASA FAR Supplements, and international policies (e.g., export control).**
  - **Adherence to standards of General Printing Office (GPO).**

- **Contents of a Space Science NASA Research Announcement**

  - **Refer to the *Handbook for Writing NASA Research Solicitations for the Office of Space Science* for overall guidance and tips.**
  - **Body of solicitation**
    - **Summary of program…its purpose and schedule.**
    - **Details of solicited research for which proposals are sought.**
    - **/Signed/ by the responsible OSS senior official (who is usually also the Selection Official).**
  - **If solicited research is particularly complex or multiplexed over a number of subprograms, NRA may incorporate an APPENDIX(CES) for Detailed Program Description(s).**
  - **By formal incorporation, uses the *NASA Guidebook for Proposers Responding to a NASA Research Announcement* to provide detailed directions for proposal preparation and submission (revised yearly by Office of Procurement and available on-line).**

- **Contents of an OSS NASA Announcement of Opportunity**

  - **Refer to the *Handbook for Writing NASA Research Solicitations for the Office of Space Science* for overall guidance and tips.**
  - **Outline specified in *NASA FAR Supplement*, Part 1872.705:**
    - **I. Description of the Opportunity**
    - **II. Announcement Objectives**
    - **III. Background**
    - **IV. Proposal Opportunity Period**
    - **V. Requirements and Constraints**
    - **VI. Proposal Submission Information**
    - **VII. Proposal Evaluation, Selection, and Implementation**
    - **VIII. Schedule**
    - **XI. Appendices, including at least**
      - **General Instructions and Provisions**
      - **Guidelines for Proposal Preparation**
  - **/Signed/ by OSS Associate Administrator and one or more OSS Science Division Directors.**

HOW?
(...are competitive proposals developed and written?)

- **Four Rules for Preparing to Write a Proposal**

1) **Read the Announcement.**

2) **Believe the Announcement (...*because NASA is legally bound to do whatever it says*).**

3) **Respond to the provisions of the Announcement as they are stated (…*and not how you wish they were*).**

4) **Go back to Rule 1 and repeat until proposal is submitted.**

Key Components of Any Proposal to NASA

- **Objectives, significance, feasibility, and plan of activity of the proposed research.**
- **Relevance of proposed investigation to NASA's objectives as solicited.**
- **Qualifications of the investigator(s) and suitability of the facilities available for the proposed investigation.**
- **Amount of, and justification for, the requested funding** ***(Point of order: What counts in the evaluation is not the absolute amount of cost but its reasonableness and realism; cost itself is generally reserved as a tie breaker between proposals of otherwise equal merits).***

Canonical Outline of a Proposal for a NASA

- ***Cover Page*** **(format proscribed on Web site).**
  - **Identification & signature of PI and identification of Co-Is.**
  - **Descriptive Title of proposed investigation.**
  - **Identification & signature of Authorized Institution Representative.**
  - **Summary of Investigation (~1/2 page, suitable for public release).**
  - **Budget Summary (total & for each year of period of performance).**
- ***Table of Contents*** **(1 page).**
- ***Summary of Personnel and Work Efforts*** **(1 page).**
- ***Scientific/Technical/Management Section*** **(~15 pages).**
  - **Objectives & significance of proposed investigation.**
  - **Technical approach & methodology.**
  - **Relevance to NASA program(s).**
  - **Management plan (including role of Co-Is and timeline of activities with key milestones, as appropriate).**

- continued-

Canonical Outline of a Proposal

-continued-

- ***References and Citations*** **(no page limit).**
- ***Facilities and Equipment*** **(2 pp, as needed and appropriate).**
- ***Curriculum Vitae for PI & any Co-I(s)*** **(3 & 1 pp, respect.).**
- ***Current and Pending Research Support*** **(required by NASA FAR Supplement for PI & Co-I(s)).**
- ***Statement(s) of Co-I Commitment*** **(signed).**
- ***Budget Details*** **(in narrative & optional institution's own format).**
- ***Reprints(s)/Preprint(s)*** **(optional; no limit but number should be limited to most critical for background/context of proposal).**

HINTS FOR WRITING SUCCESSFUL PROPOSALS

1. **Carefully read & follow instructions in the announcement of interest.**

   Subtext: …respond to the opportunity as published since NASA is legally obligated to review and select on that basis.

2. **Clearly state the objectives of the proposal and its implementation plan.**

   …clearly address the "Who, What, Why, When , Where, & How" of the proposed investigation.

3. **Provide judicious amounts of tutorial material, especially if proposing innovative work.**

   …not everyone reviewing the proposal can or will be an expert in all aspects of the proposed research.

4. **Clearly address the objectives of the program as stated in the solicitation.**

___ ***…NASA is a program-driven agency and only supports activities commensurate with its objectives.***

5. **Proof-read proposal before submission; if at all possible have a colleague critically review it.**

   …strive for a quality of text commensurate with an article prepared for submission to a journal.

6. **Keep the proposal text as short as possible consistent with completeness, clarity, and understandability.**

   … "page limits" ***are*** **limits** ***and not quotas to be filled; use easily read fonts, including those for figure captions.***

7. **Propose bold, fresh, new ideas.**

   …avoid submission of only slightly revised versions of proposals rejected in previous competitions.

8. **Include all requested information in specified order.**

   …all requested information is, in fact, used during the review/selection/funding activities.

9. **Strive for the lowest cost budget that is also realistic as well as reasonable.**

   …all three cost factors are important and are reviewed.

10. **Provide sufficient detail in order to fully understand the proposed budget.**

    …budget details really are important; inadequate information can and will delay implementation of an award!

SUMMARY CONCERNING

THE WRITING OF PROPOSALS

ESCHEW

OBFUSCATION

~ AND ~

ALWAYS PLAN AHEAD

"RESEARCH OPPORTUNITIES IN SPACE SCIENCE (ROSS) - 200N"

- **Office of Space Science's yearly omnibus NRA.**
- **Released yearly on-or-by January 31, 200N.**
- **Includes 25-30 programs for research in basic science &/or technology of interest to OSS.**
- **Due dates start late March and extend through next 12 months.**
- **Master tables in *Summary of Solicitation* list Proposal Due Dates (i) chronologically, and (ii) in order of NRA Appendices A, B, C, D.**

RESEARCH OPPORTUNITIES IN SPACE SCIENCE (ROSS) - 200N

- **Appendices based on OSS Science Divisions:**
  - **A - *Astronomy and Physics***
  - **B - *Exploration of the Solar System***
  - **C - *Sun-Earth Connection***
  - **D - *Multidisciplinary***
- **Additional programs may be added at any time during year; announced by OSS E-notifications and on NRA's Web site.**

RESEARCH OPPORTUNITIES IN SPACE SCIENCE (ROSS) - 200N

- **All ROSS proposals submitted in accord with the *Guidebook for Proposers Responding to a NASA Research Announcement (NRA)* found at <www.hq.nasa.gov/office/procurement/nraguidebook/>.**
  - **Requires electronically submitted *Cover Page/Proposal Summary* that is then printed, signed, and sent in hard copy with proposals.**
  - **Hard copies of proposals due on stated Due Date (late proposals rarely accepted).**

RESEARCH OPPORTUNITIES IN SPACE SCIENCE (ROSS) - 200N

- **Each program in Appendices has an assigned Program Officer as point of contact.**
- **NASA metric for period from Proposal Due Date to selection announcement : = 150 days (or passage of NASA budget, whichever comes first!).**
- **NASA metric for period from selection to award: 46 days (assuming no problems in negotiating proposal budget or scope of effort).**

RESEARCH OPPORTUNITIES IN SPACE SCIENCE (ROSS) - 200N

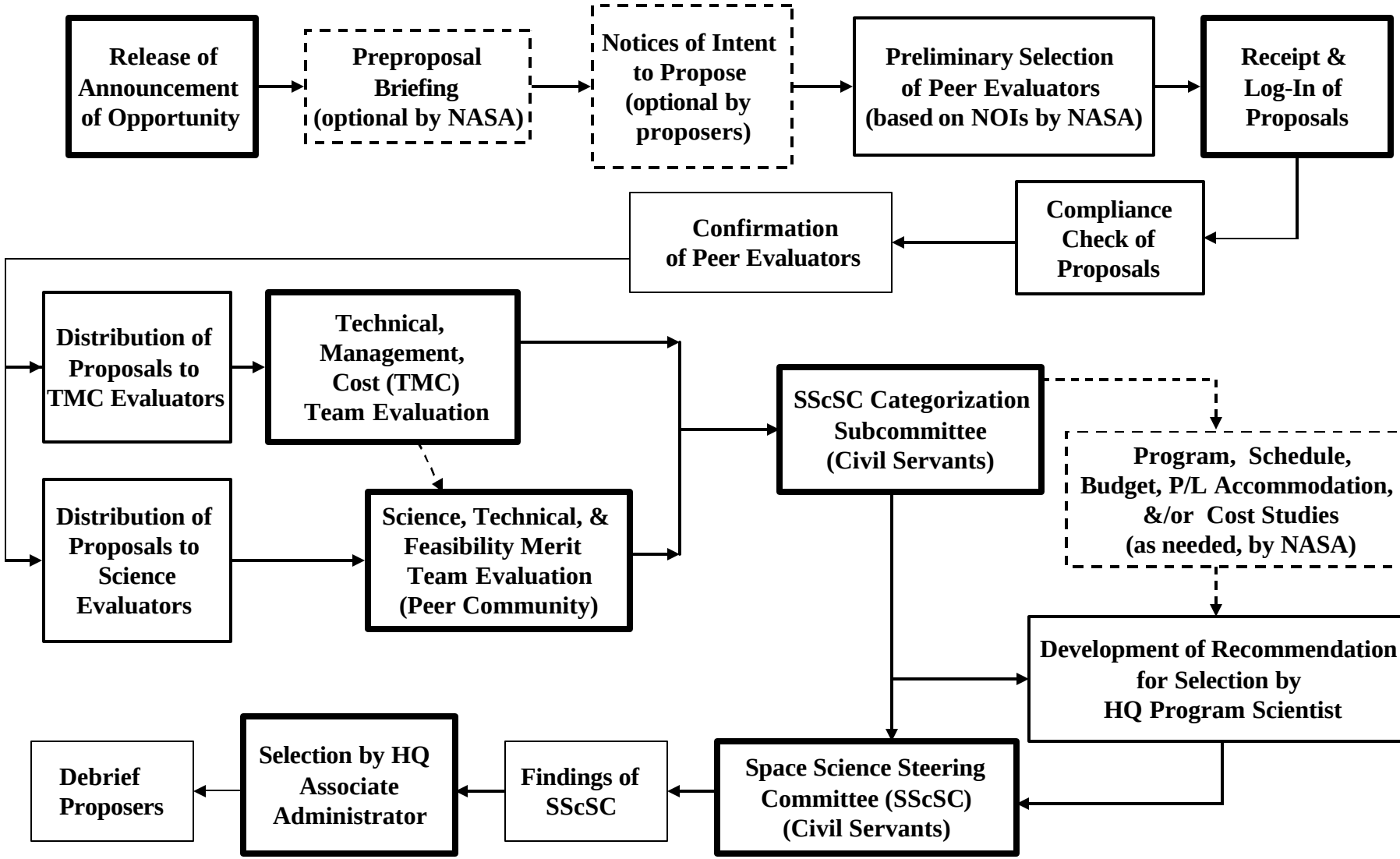
- **Typical period of performance:**
  3 years (a few programs allow 5 years).
- **Typical size of awards (grants, contracts):**
  - Small (e.g., data analysis) @ $35-60K/yr.
  - Medium (most common) @ $75-125K/yr.
  - Large (rare; typ. involves hardware construction) @ $250-1500K/yr.
- ***Yearly Progress Report* required for successive yearly funding supplements of award.**

HOW?
(...are proposals reviewed?)

- **Peer Review of Proposals: Principles That Apply**
  - Taken very seriously by NASA & the peer communities.
  - The foundation for world-class excellence of U.S. science.
  - Friendships & reputations left at door of review panel.
  - Process is hard work for both reviewers and NASA.

- **Basic Mechanics of Peer Review Process**
  - Select qualified reviewers, free of conflicts of interest.
  - Send proposals to reviewers 2–3 wks prior to panel meeting.
  - If solicited, mail-in reviews may be accepted or rejected by Panel but they must articulate rationale for action.
  - Conduct meeting and document/verify Consensus Reviews.

AO Proposal Evaluation & Selection Process



Proposal Evaluation by Scientific Peer Panels

Key point: A successful, defensible selection is based on thorough, fair, and knowledgeable peer reviews.

- **Notices of Intent (NOIs) to propose are used for preliminary identification of knowledgeable scientists as reviewers.**
- **Reviewers are screened for freedom from conflicts of interest.**
- **As many reviewers and subpanels are used as necessary to ensure uniform, fair coverage of submitted proposals.**
- **Panel are convened in comfortable, well-staffed facility.**
- **Panel are chaired by one of its senior members.**
- **Panel implored/threatened to maintain confidentiality.**
- **New panel(s) convened for every solicitation (i.e., "standing" panels are not used).**

Proposal Evaluation (continued)

- **Peer evaluations must clearly document Strengths and Weaknesses for all criteria stated in solicitation, and the Consensus Review must be consistent with these findings!**
- **Peer review committees review proposals, they do not "recommend" selections (that's the Program Officer's job).**
- **Cognizant NASA Program Officer is present to (i) maintain pace of activity, (ii) resolve issues concerning conflicts of interest between reviewers and proposers, and (iii) evaluate final reviews for: - completeness,**
  - clarity, and
  - freedom from nonrelevant comments.
- **All proposals and review materials left at conclusion of panel meeting.**

Proposal Evaluation (continued some more)

- **Evaluation Scale:**
  - ***Excellent*** **(many strengths; no significant weaknesses).**
  - ***Very Good*** **(many strengths; a few "fixable" weaknesses).**
  - ***Good*** **(adequate response to solicitation having neither any major strengths or weaknesses).**
  - ***Fair*** **(few if any strengths; significant weaknesses).**
  - ***Poor*** **(inadequate response to solicitation).**

- **Evaluation Philosophy: A proposal is considered "Good" until shown otherwise by determination of Strengths, which improves its rating, or Weaknesses, which lessens its rating. (Note: this approach forces use of full Evaluation Scale & facilitates debriefing of nonselected proposers.)**

Generic NASA PEER REVIEW FORM

PI / Institution: _____ Proposal No: _____
Proposal Title: _____

SCIENTIFIC & TECHNICAL MERIT

Suggested topics for critical comment (not inclusive):

- ***Intent and Relevance***
  - ***Scientific merit of the proposed investigation to the field.***
  - ***Clarity and completeness of proposed investigation.***
  - ***Relevance of proposed objectives to those given in the solicitation.***
- ***Proposed Methodology and Approach***
  - ***Technical feasibility and merit of proposed research plan.***
  - ***Clarity and completeness of proposed research plan.***
- ***Closure of Effort***
  - ***Likelihood the proposed investigation to resolve the proposed objectives.***

SPECIFIC STRENGTHS & WEAKNESSES (*must be consistent with Overall Scientific & Technical Merit rating, p. 2*)

_____…

… **-continued-**

_____

PI / Institution: _____ Proposal No: _____

_____

SUMMARY EVALUATION

(*must be consistent with overall Scientific and Technical Merit rating below*)

.....

.....

.....

.....

.....

Overall scientific and technical merit, including unique and innovative methods, approaches, or concepts demonstrated by the proposal:

___EXCELLENT ___VERY GOOD ___GOOD ___FAIR ___ POOR

PI / Institution: _____ Proposal No: _____

PROGRAMMATIC FACTORS

(*optional and only to extent Peer Reviewers are competent to comment*)

(a) Offeror's (institutional) capabilities, related experience, facilities, techniques, or unique combinations of these that are integral factors for achieving proposal objectives.

(b) Qualifications, capabilities, and experience of the PI and key personnel who are critical for achieving the proposal objectives.

(c) Overall standing among similar proposals available for evaluation and/or evaluation against the known state-of-the art.

(d) Relevance to stated program Announcement objectives and balance.

(e) Reasonableness and realism of proposed costs.

PROPOSAL CATEGORIES (for AO's only)

Category I: Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives, and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and that data can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.

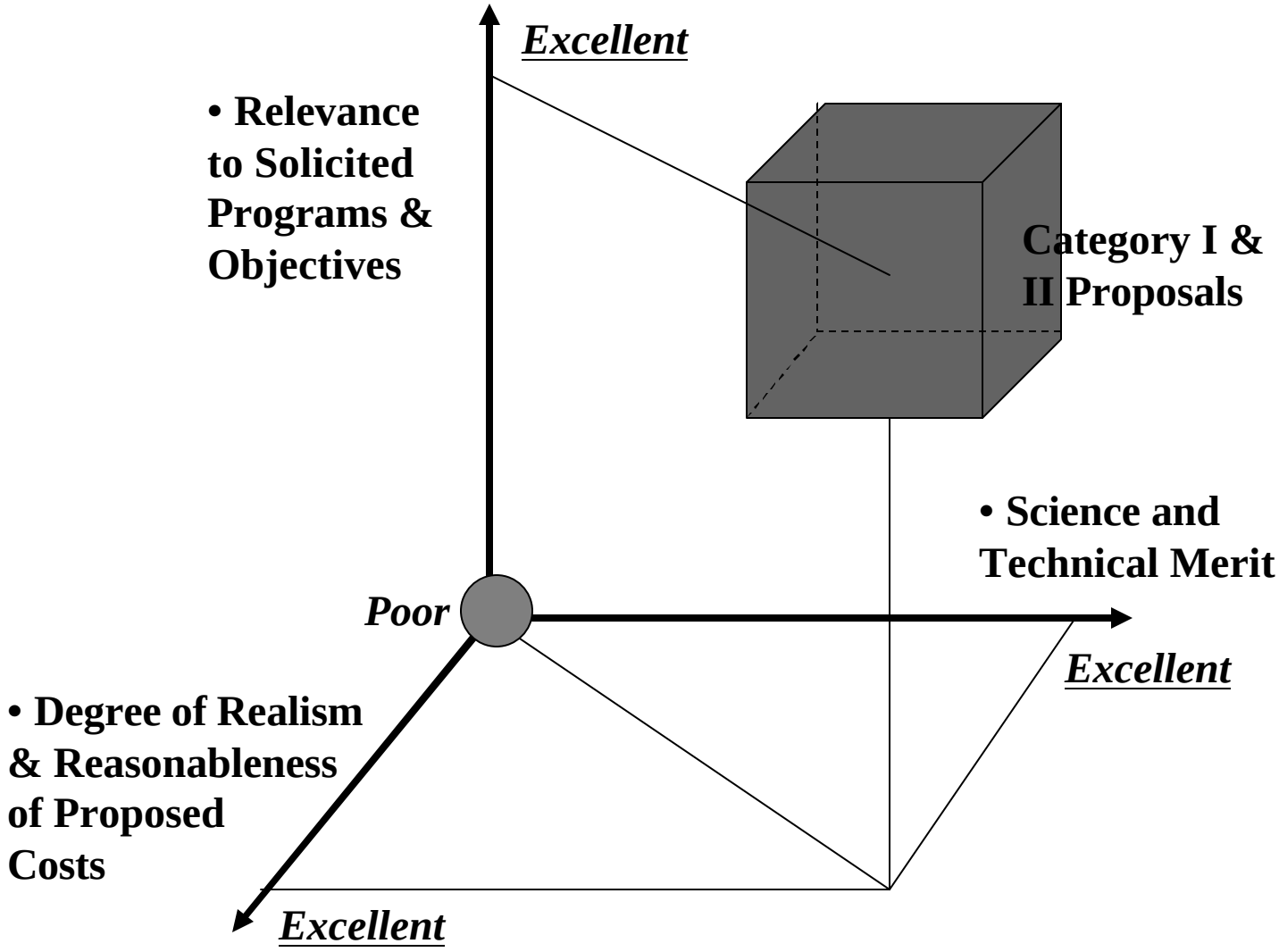
Category II: Well-conceived and scientifically or technically sound investigations that are recommended for acceptance, but at a lower priority than Category I.

PROPOSAL CATEGORIES
(continued)

Category III: Scientifically or technically sound investigations that require further [*technology*] development. [*Only if specified in the AO*] Category III investigations may be funded for development and [*regardless if funded or not*] may be reconsidered at a later time for the same or other opportunities.

Category IV: Proposed investigations that are recommended for rejection for the particular opportunity under consideration, whatever the reason.

PHASE SPACE of SELECTABLE PROPOSALS



HOW?
(...are proposals selected?)

- **For NRAs and CANs, the Program Officer:**
  - **Develops a recommendation for selection based on all peer review, programmatic, and budgetary considerations; and**
  - **Presents recommendation for selection to Selection Official (usually a Division Director in the cognizant Program Office).**

- **For AOs:**
  - **Program Officer develops a recommendation for selection based on categorizations plus applicable programmatic and budgetary considerations (*Rules: only Category I & II proposals may be selected; and a Category II proposal may not displace a similar Category I even if less expensive*);**
  - **Program Officer presents recommendation for selection to the Space Science Steering Committee (appointed by the Associate Administrator) to ensure (i) adherence to procurement regulation, (ii) the integrity of AO and all review processes, and (iii) the adequacy of all documentation; and**
  - **Steering Committee forwards its "findings" and a recommendation for selection to the Selection Official (typ. the Associate Administrator).**

Selection Process (continued)

- **For any type of announcement, the Selection Official may select any qualified proposal but he/she becomes responsible for defending that decision by signing a Selection Statement (note: the Selection Statement is the only item that must be released upon public request; all other review materials are considered "predecisional").**
- **Letters of selection/non-selection are sent simultaneously and as soon as possible after decisions are made:**
  - **Letters of selection reflect 'scope' of selection, including any 'descopes' from the proposed effort, and guidance on how proposal will be implemented.**
  - **Letters of rejection contain guidance for securing a debriefing for reasons of non-selection.**
- **Debriefing of non-selected proposers based on the peer reviews are offered (usually verbal; may be on phone or in person).**

Implementation of Selections

- Selected proposers may not commit funds until award is concluded by a NASA Awards Officer.

- Type of award determined by type of solicitation and the nature of the proposing organization:

  - AO: (i) For U.S. non-government organizations of any type: contracts since deliverables and hard schedules are involved; (ii) for U.S. government organizations: inter-Agency transfers of funds; (iii) for non-U.S. organizations: Memorandums of Understanding (MOUs).
  - NRA: Typically grants for non-profit organizations, contracts for for-profit organizations, and inter-Agency transfers for other U.S. Government agencies.
  - CAN: Cooperative agreements for all U.S. organizations (for-profit organizations must agree to matching funds and other restrictions).